This Page Is Inserted by IFW Operations and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problem Mailbox.

Exhibit A

Pairwise Alignment

Sequence 1: Fig.11A 5393670 Sequence 2: SEQIDNO1 09/888,224 Optimal Global alignment

Alignment score: -1036

Identities: 0.34

Fig.11A 5393670	1		
SEQIDNO1 09/888,224		atgataaacgttgcaacgggagaggaccccaatacacctctttggagtcaactggttc	
Fig.11A 5393670 SEQIDNO1 09/888,224	1 61	ggctttgagacaccgaactacgttgttcacggcctatggagtaggaactgggaggacatg	1 120
Fig.11A 5393670 SEQIDNO1 09/888,224	1 121	ctcctccagatcaagagccttggcttcaatgcgataaggcttcccttctgtacccagtca	1 180
Fig.11A 5393670 SEQIDNO1 09/888,224	1 181	gtaaaaccggggacgatgccaacggcgattgactacgccaagaacccagacctccagggt	1 240
Fig.11A 5393670 SEQIDNO1 09/888,224	1 241	cttgacagcgtccagataatggagaaaataatcaagaaggctggagacctgggcatattc	1 300
Fig.11A 5393670 SEQIDNO1 09/888,224	1 301		29 360
Fig.11A 5393670 SEQIDNO1 09/888,224	30 361	TGCC-GIT-GACCGCGCCAICCTGGCCCA-IITG-CCCGCCTCGTCGC-aggtttclcgggaggtaggagtacataaaacacctgggttgaagtcgcccagagggttcggcaag	72 420
Fig.11A 5393670 SEQIDNO1 09/888,224	72 421	CCCCG	102 480
Fig.11A 5393670 SEQIDNO1 09/888,224	103 481	c	135 540
Fig.11A 5393670 SEQIDNO1 09/888,224	136 541	AACTCCCCCCCGIGCCTGCCCCACCACACCTCGGI-GGICC a.cctggcuggttslagaagal agsaaagascaattctggaacttgccccacaatgggs tata	176 600
Fig.11A 5393670 SEQIDNO1 09/888,224	176 601	TTGACTCGAACTA-CCCCTTGGA: GCACCACGG-AAACTAC tttgt::gaggaacccagttcarcciccccrgaga: agacagtagatagatgtggggccac	214 660
Fig.11A 5393670 SEQIDNO1 09/888,224	215 661	AC.C.C.C.C.C.C.C.C.C.AC	244 720
Fig.11A 5393670 SEQIDNO1 09/888,224	244 721	-ACC-CCCTCTCCTGACGACG	267 780
Fig.11A 5393670 SEQIDNO1 09/888,224	268 781	GCTG-IGC-C	298 840
Fig.11A 5393670 SEQIDNO1 09/888,224	299 841	GICG-AC-I-,CCC	329 900
	901	ColorConCarCCTrac CATracCCACCCACC gningmacccgarggatgrent ttggcagaacaasaatagar tggatgar cragaac	960
Fig.11A 5393670 SEQIDNO1 09/888,224	368 961	GCTCTCCCGGCTACAC: ACGTCTCTCCICCCCTCTA-I .aatte: g::garttctte:	406 1020
Fig.11A 5393670 SEQIDNO1 09/888,224	407 1021	CICCT-CCACTCTCA-CRC-TCAGIA GTG-TGCI -A-A-GCICA CIgaaguataact ggacuacaatatgg-aguacaann acaa acat aa gugici catg	446 1080
	1081	garair tgttrttid aac ccadigeccadic controc a garaam acaacaacaadc	1140
Fig.11A 5393670 SEQIDNO1 09/888,224	487 1141	CCTT	510 1200
Fig.11A 5393670 SEQIDNO1 09/888,224	510 1201	-CTACC-TGTCTCAGTGCACG-G-GACGGGGGGGCCAACCA accate actacts canctacens anconcens accacaactect traaatan egteeca	549 1260

Fig.11A 5393670	549
SEQIDNO1 09/888,224	1261 tttuaaat gtgadegtteteemaetaueteeengtaegaaaeengegtgaagt. 1320
Fig.11A 5393670 SEQIDNO1 09/888,224	585 AC-TGCGAT-GCTCACTCCCCCGTCCAC-ACATGGACGACCGCACC 628 1321 gtatgtgatguaacccagtgtgct-tccagcgtttgggggagctccgancctctgggggggt 1379
Fig.11A 5393670 SEQIDNO1 09/888,224	629 CTCAC-AC-TAGCCACC GGCCTTCT-GCTCCA2CGAGATGGA-T. 671 1380 cgttaaaaccggaaacgccaccatggaaccccaacctttgggggatuggagacgtttacaa 1439
Fig.11A 5393670 SEQIDNO1 09/888,224	672 TCCTCGAGCCGCAACTCGGCGCGAATGCCTTG-ACCC- 707 1440 gactgcaccccaggacattggancctgcaggacaaagatggagaaaaggaacggggtggt 1499
Fig.11A 5393670 SEQIDNO1 09/888,224	708 CTCCTCTT-CACGCCAC-GGCCTGCCAGTCT-G
Fig.11A 5393670 SEQIDNO1 09/888,224	742 CCCTIGCGGCTTCAACCCCTATGCCA-GC
Fig.11A 5393670 SEQIDNO1 09/888,224	780 GCT-ACTACCGCCCCGG-GATAG-CGTTG-ACAC-CTG 813 1620 gct cccgataaagutctcccaaguttccgaggaa actcgat gacacaaagtacacgctcga 1679
Fig.11A 5393670 SEQIDNO1 09/888,224	814 CAAGACCTTCACCATCATCACCCAGTTCCACCGA 849 1680 aaagagget cccgggaaacaactagt egcetttgagggetggctct caagggitgccaacas 1739
Fig.11A 5393670 SEQIDNO1 09/888,224	850 C.ACGGC-TCGCCCTCGGCCC-C-TT-GAGCATCACCCGCAACTACCA 897 1740 Catgagagaccacagagaccaggagactacgagataaaggaracagccctacategaaggagg 1799
Fig.11A 5393670 SEQIDNO1 09/888,224	898 GCAAAAG-GGGGTGDAG-G-TCCCCACCGCCGGCCGGCCGGCCGGCCGGC
Fig.11A 5393670 SEQIDNO1 09/888,224	943
Fig.11A 5393670 SEQIDNO1 09/888,224	978 C
Fig. 11A 5393670 SEQIDNO1 09/888,224	1005 GC GC A G I-GC GC TGT-I Come A TTG Grand Carchage 1047 1980 caaatte atawaaatagti wacaacaaca con congenging on the carchage carchage 2039
Fig.11A 5393670 SEQIDNO1 09/888,224	1048 CCAGIALA:
Fig.11A 5393670 SEQIDNO1 09/888,224	1086 C TCC-GCAGC-ACC GCA GCA TCC-ACC 1118 2100 agtggacgtaaggtagacacttgacaagtacaattcattc
Fig.11A 5393670 SEQIDNO1 09/888,224	1119 TCC:GCCA
Fig.11A 5393670 SEQIDNO1 09/888,224	.1139 A CO ACCTOGTO
Fig.11A 5393670 SEQIDNO1 09/888,224	1186 A GRACTEGACI G GCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Fig.11A 5393670 SEQIDNO1 09/888,224	1240 Luagottanietacecegiacesitgggenetgicoconagececaattaneagggargeasa 2399
Fig.11A 5393670 SEQIDNO1 09/888,224	1298 CACTGCI-I-IGG-CALTEGG-IAC -GG - TGG - T-III-G-III-CA-GGT 1340 2400 Ggaaacccanastactacan asaaana cccatasaacatactacggaccaaaaggta 2459
Fig.11A 5393670	1341 CCGGCCC-I-ACGIGCCGCATAGGAA-AACIAGGACI-CC-CAATGCCCITAC 1390
	·

Fig.11A 5393670 1391 AGCGTTGACT 1400 SEQIDNO1 09/888,224 2520 tatatgatga 2529

Fig.11A 5393670 SEQIDNO1 09/888,224	1	MINVATGEETPIHLFGVNWFGFETPNYVVHGLWSRNWEDMLLQIKSLGFNAIRLPFCTQS 60
Fig.11A 5393670 SEQIDNO1 09/888,224	1 61	VKPGTMPTAIDYAKNPDLQGLDSVQIMEKIIKKAGDLGIFVLLDYHRIGCNFIEPLWYTD 120
Fig.11A 5393670	16	CXXDHGXX-XXXXXXXXLVXXXP-X-XXPX-V-XXXTXXXXX-XXXXXXKLXXXYKX-XY 68
SEQIDNO1 09/888,224	121	SFSEQDYINTXVEVAQRFGKYWNVIGADLKNEPHSSSAAPAAYTDGSGATWGMGNNATDW 180
Fig.11A 5393670	69	X-XSXGVXXX-XQXXLRXXX-XDW-X-XXRWMHDXXX-XYXXSCTVXXXR-XXQ-X- 116
SEQIDNO1 09/888,224	181	NLAAERIGRAILEVALQWXIFVEGTQF*TPEIDGRYKWGHNAWWGGNLMGVRKYPVNLPR 240
Fig.11A 5393670	117	XH-XXX-X-X-X-XXEX-XXX-XX-XX-XXCFIX-XXXXXXX-XAXXXVXDX 158
SEQIDNO1 09/888,224	241	DKVVYSPQVYGSEVYLQPYFDPGEGFPDNLPEIWYHHFYY KLDLGYPVVIGEFGKYGH 300
Fig.11A 5393670	159	RAXXSXX XXXQYMPSXXSGXX - SVXXXX-XCCX XXX SX-XXXXX VM XXXX 211
SEQIDNO1 09/888,224	301	GGDPRDV WQXKIIDWMIQNKFCDFFWWWNPNGGDTCGI KD WTTIWEDK NNI KRIM 360
Fig.11A 5393670	212	XG-XCAXASTXDLSXSX-IXXXXXXXXXIAXAXIXSQXWIXXIGAX-X 256
SEQIDNO1 09/888,224	361	DSCSCNATAPSVPTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Fig.11A 5393670	256	-XXXX-XTAGANTX-AAXCXXXCCPVXXXXX-XXXXTX-XXXXXSH GFX QRDGX 309
SEQIDNO1 09/888,224	421	FEIVNVLPTSSQYECTSVEVVCI GTOCAX RLGSSEPLCSR*NRKRHHGP RLG GGRLQ 480
Fig.11A 5393670	310	SW-XCQLXXXX-NXXXXX-XX-XXXI ARPX C-X-XSX-XXX-LELCPHW-XXGYXXX 358
SEQIDNO1 09/888,224	481	DCTPCHWNRQHKDGDKERGAQGYKPCEHQH.SEV*HNGIPGGHIERCALGQPANKRSELR 540
Fig.11A 5393670 SEQIDNO1 09/888,224	359 541	XXXXAPX XXXXHXXQDHHHX-XXXVXX-HGQX XXX SX-XXXCEHHPQVP 408 APDKGLP SE TH *HKVHARKE PGKQLRL*GLALQGCQQHE TRE GGLRDNGTALHRGR 600
Fig.11A 5393670	409	AXNXR XXP AQPGXX X-X-X-S-XVXA PPXXXLXAXXL T-XG XXX-XXX 456
SEQIDNO1 09/888,224	601	LSCGL QGA SHR*CS NRRWKACKPDF*AL RHSGCRMEVLHLQ N*EL RLRGCVRLH 660
Fig.11A 5393670	456	Q:XXW-XA:XXX HLIRQQP HXX-XXX-LDSXQX-XRXX-X-XQQXX-EGX2IQX-504
SEQIDNO1 09/888,224	661	QIH:NS*QLP-RW,PHEPLPD PGIRYRDIHQRVHLIPMHSGRKVDP*QVQVHPGPRNNG 720
Fig.11A 5393670	505	SX-CX-XXX-XPXXXXVVXXSXIRWGDIGXYELDCAPAPACVQHDXFRX- 552
SEQIDNO1 09/888,224	721	H*GXHESSRRRGPASRFHNXIADDYFNHNPTAHYHYYDXDFNHHYNHLTXDNHRTCSGRN 780
Fig.11A 5393670 SEQIDNO1 09/888,224	553 781	YTEXAR LRA AARRXHAGQX-XXXHWXTXXVXXXXXR AXXVPV* XTTXXXQCP-* 610 *AQVPG+WAVA-GPN*QG-RRKPRVL RNKPVEHTER*KL-RDDLQLECRGSPLRPG-G 840
Fig.11A 5393670 SEQIDNO1 09/888,224		SVD 613 YMM 843

.

~~{